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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,236	09/25/2003	Leo S. Chang	019022-000510US	8703

20350 7590 09/19/2005

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EXAMINER

ALI, SYED J

ART UNIT

PAPER NUMBER

2195

DATE MAILED: 09/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/672,236

Applicant(s)

CHANG ET AL.

Examiner

Syed J. Ali

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>Jan. 5, 2004</u> | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. Claims 1-23 are pending in this application.

Specification

2. The cross reference related to the application cited in the specification must be updated (i.e. update the relevant status, with PTO serial numbers or patent numbers where appropriate, on page 2, lines 5). There should also be a reference to the parent application, 09/524,046, in the first paragraph of the specification of this application. The entire specification should be so revised.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

5. Claim 15 recites the limitation "said executed I/O tasks" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1-6, 16-19, and 22-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Heimsoth et al. (USPN 5,764,915) (hereinafter Heimsoth) in view of Broder et al. (USPN 5,991,808) (hereinafter Broder).**

8. As per claim 1, Heimsoth teaches the invention as claimed, including a computer system for optimizing processing of an annotation request from a client, comprising:

a request processor for receiving said annotation request from said client (Fig. 1 element 22);

a thread-controlling means for maintaining a plurality of threads (col. 21 lines 45-56); and

an assigning means for assigning said plurality of threads to said plurality of constituent tasks in said task queue (col. 22 lines 13-25).

9. Broder teaches the invention as claimed, including a task queue for storing a plurality of constituent tasks that need to be performed for said annotation request (col. 4 lines 21-28).

10. It would have been obvious to one of ordinary skill in the art to combine Heimsoth and Broder, as Broder provides an added dimension of schedulability to the design of Heimsoth. Heimsoth discusses dynamically allocating threads from the thread

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pool, but is silent regarding as to how to deal with excess requests. By including a FIFO task queue, additional tasks can be held at the server, thereby increasing the parallel processing capabilities of the system.

11. As per claim 2, Heimsoth teaches the invention as claimed, including a computer system according to claim 1, wherein said plurality of threads is independent from said plurality of constituent tasks stored in said task queue (col. 22 lines 26-45).

12. As per claim 3; Heimsoth teaches the invention as claimed, including a computer system according to claim 1, wherein said plurality of threads is persistent (col. 23 lines 8-33).

13. As per claim 4, Broder teaches the invention as claimed, including a computer system according to claim 1, wherein said plurality of constituent tasks is arranged in a substantially first-in-first-out basis within said task queue (col. 4 lines 21-28).

14. As per claim 5, Heimsoth teaches the invention as claimed, including a computer system according to claim 1, wherein when a thread is available for assignment, said thread is assigned to a constituent task when said constituent task is ready for execution (co. 24 lines 37-63).

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15. As per claim 6, Heimsoth teaches the invention as claimed, including a computer system according to claim 5, wherein said assigned thread is released upon conclusion of said constituent task (col. 24 lines 64 - col. 25 line 4).

16. As per claims 16-19 and 22, similar limitations are presented as those in claims 1-3 and 6. It is noted that in claim 16 the tasks are referred to as "requisite tasks" as opposed to "constituent tasks." However, as Heimsoth is related to a multithreading environment, it can safely be assumed that all tasks to be performed in the system will be subject to multithreading requirements. As such, an operating system thread must be allocated as well as I/O threads and other such essential, i.e. "requisite", system threads. Since these are required for the successful operation of the system, it follows that Heimsoth covers requisite tasks as well as constituent tasks.

17. As per claim 23, Heimsoth teaches the invention as claimed, including a method according to claim 19, wherein said assigning of said available thread to said constituent task is independent of the nature of said constituent task (col. 25 lines 37-63).

18. **Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heimsoth in view of Broder in view of Bahr.**

19. As per claim 7, Bahr teaches the invention as claimed, including a computer system according to claim 1, wherein said plurality of constituent tasks includes checking

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a cache to determine whether information pertaining to said annotation request is present in said cache (col. 4 lines 7-20).

20. As Bahr teaches increasing the number of tasks executed in cache, Bahr inherently must check the cache to determine if information pertaining to that task is present in the cache. It would have been obvious to one of ordinary skill in the art to combine Heimsoth and Broder with Bahr since allowing tasks to execute in cache would significantly increase performance by saving the processing time of looking up the information regarding a task each time it is executed. Retrieval from persistent memory or from the disk is an expensive and time-consuming operation. To store task information in cache would greatly reduce pre-processing overhead.

21. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heimsoth in view of Broder in view of Bauer (USPN 5,877,759).

22. As per claims 8-9, Bauer teaches the invention as claimed, including a computer system according to claim 1, wherein said plurality of constituent tasks includes retrieving information pertaining to said annotation request from one or more sources, wherein said one or more sources include the Internet (col. 7 lines 45-57).

23. It would have been obvious to one of ordinary skill in the art to combine Heimsoth and Broder with Bauer since Bauer provides a way of ensuring that the information regarding a task is completely up to date by checking it against another resource. In this way, the most accurate results are obtained.

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24. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heimsoth in view of Broder in view of van Hoff (USPN 5,822,539).

25. As per claim 10, van Hoff teaches the invention as claimed, including a computer system according to claim 1, wherein said plurality of constituent tasks includes annotating a retrieved web page with additional hyperlinks (col. 5 lines 26-55).

26. It would have been obvious to one of ordinary skill in the art to combine Heimsoth and Broder with van Hoff, as Internet use for commercial purposes is ever increasing, such that providing information to a user pertaining to resources the user is interested in has a marketable benefit. van Hoff provides a way of supplementing Heimsoth and Broder by providing a function may result in a gain in revenue.

27. As per claim 11, van Hoff teaches the invention as claimed, including a computer system according to claim 1, wherein said plurality of constituent tasks includes updating a cache with annotated information (col. 1 lines 39-55).

28. Claims 12-15 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heimsoth in view of Broder in view of Spix et al. (USPN 5,179,702) (hereinafter Spix).

29. As per claim 12, Spix teaches the invention as claimed, including a computer system according to claim 1, further comprising:

an I/O queue for storing a plurality of I/O tasks identified from said plurality of constituent tasks, wherein said plurality of I/O tasks only perform input and/or output functions (col. 15 lines 3-27).

30. It would have been obvious to one of ordinary skill in the art to combine Heimsoth and Broder with Spix since Spix shows how to achieve full functionality of a multithreaded system. The system must be able to perform I/O operations as well as run an operating system while performing the claimed annotation. In this sense, Spix provides a way of queuing I/O tasks in a way that the system can perform input and output functions without interrupting the operating system functions.

31. As per claim 13, Spix teaches the invention as claimed, including a computer system according to claim 12, wherein two or more of said plurality of I/O tasks are executed in a parallel manner (col. 14 line 61 - col. 15 line 2).

32. As per claim 14, Heimsoth teaches the invention as claimed, including a computer system according to claim 12, wherein said task queue is notified upon completion of each of said plurality of I/O tasks (col. 25 lines 5-12).

33. As per claim 15, "Official Notice" is taken that a computer system according to claim 14, wherein upon said notification one or more of said plurality of constituent tasks which require results from said executed I/O tasks are rendered ready for execution would have been obvious to one of ordinary skill in the art. The act of waiting until a

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specific task has completed due to data dependencies and other related dependencies is a well known and expected feature of the prior art.

34. As per claims 20-21, similar limitations are presented as those in claims 12-13 and 15.

Conclusion

35. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Syed J. Ali whose telephone number is (571) 272-3769. The examiner can normally be reached on Mon-Fri 8-5:30, 2nd Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai T. An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Syed Ali
September 13, 2005



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SUPERVISORY PATENT EXAMINER
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